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Cont zeolite, wherein said heat-resistant oxide is loaded with a noble metal, and said composition is coated on the partition walls.

REMARKS

Claim 3 has been amended to include a further feature of the high-silica zeolite in the composition coating the partition walls of the claimed honeycomb adsorbent structure. The zeolite is now said also to have an alkali metal content of 0.1% by weight or less. This feature is supported in the specification at page 21, lines 24 to 26 and Table 1 at page 22. This change and the reason thereof will be discussed in more detail herein.

The rejection of claims 3, 5, 6, 12, and 14 under 35 USC 103 as allegedly unpatentable over the translation of Hei 2-56247 in view of Eberly, Jr. ('488) is respectfully traversed. Applicants acknowledge that the present primary reference is the full document (and full translation) counterpart of Abstract 113:102645CA, which had been cited in previous Official Actions.

The last full paragraph at page 3 of the Official Action states that applicants claim "a composition." Applicants respectfully point out that there are no pending composition claims and that all claims considered and rejected are directed to an adsorbent structure that includes partition walls coated with a

high-silica zeolite containing composition as further defined in those claims.

The Examiner states that the newly cited primary reference discloses a composition for automobile exhaust gas treatment comprising a zeolite and an alumina-based heat resistant oxide having platinum loaded thereon. A honeycomb shaped support is also said to be taught in the reference. The Examiner does acknowledge that there is no discussion of the silica/alumina ratio in this reference nor does it say anything about the specific structure of the honeycomb.

Eberly, Jr. '488 was cited for the proposition that it is known to use zeolites having high Si/Al ratios to display increased thermal stability. The Examiner therefore concluded, based upon the statement in the secondary reference and the alleged conventionality of the honeycomb shapes, that the claimed subject matter was not patentable over this combination of references. Applicants respectfully disagree for the reasons appearing below.

The primary reference device is structured such that the zeolite layer is required to be an inner layer. The newly-cited reference also has no description of thermal stability and the influence of water on the zeolite's hydrocarbon adsorption capacity.

As mentioned previously, claim 3 has been revised to indicate that the zeolite has an alkali metal content of 0.1% by weight or less; in other words, the alkali metal content does not exceed 0.1 wt. %.

Applicants respectfully submit that the disclosure in the secondary reference regarding thermal stability does not lead the person of ordinary skill in the art to pick a Si/Al ratio of at least 40 as adsorbent for hydrocarbons at the time of cold start. Applicants discussed previously in the Preliminary Amendment filed February 10, 1999 why the secondary reference does not lead the person of ordinary skill in the art to the instantly claimed invention; see the paragraph bridging pages 4 and 5 of that paper and the remarks continuing over to the end of page 6. The Examiner is also directed to applicants' previous arguments in the Amendment Under 37 CFR 1.116 filed October 26, 1998; see the paragraph bridging pages 2 and 3 of that paper and the continuing remarks over to the paragraph pages 3 and 4.

Moreover, a high Si/Al ratio does not alone guarantee suitability as a hydrocarbon adsorbent. Applicants point out that the retention of a high BET, that is, a specific surface area at a high temperature is also influenced by the alkali metal content of the zeolite. The Examiner's attention is directed to the instant specification at page 21, lines 24 to 26 and Table 1 at page 22.

Applicants acknowledge that Eberly, Jr. '488 describes an alkali metal content in the zeolite at column 5, lines 34 to 37. The reference, however, contains no description regarding the relationship among BET, the Si/Al ratio, and the alkali metal content. The reference does not teach the essentiality of having a minimum Si/Al ratio in combination with a specific alkali content to retain BET at temperatures such as 1,000°C. Nor does the reference suggest such a relationship.

The use of a zeolite having merely a high Si/Al ratio does not guarantee retention of a high BET at a high temperature; in this regard, the Examiner is directed to the results of zeolite A and zeolite G in Table 1 at page 22. Zeolite A has a Si/Al ratio of 14 (less than 40) and zeolite G has a Si/Al ratio of 200 (greater than 40); the BET values for both are unsatisfactory. The Examiner is also directed to the results for zeolites B to F and compare them with the zeolite G results. An assessment of the results for all of those zeolites listed in the table shows the need to have both the Si/Al ratio and the alkali metal content features in the zeolite as now recited in the claims. The specification establishes the patentability of the claimed subject matter and the rejection should be withdrawn.

Applicants also respectfully traverse the rejection of claims 3, 5, 6, 12, and 14 under 35 USC 103 over the translation of Hei 2-

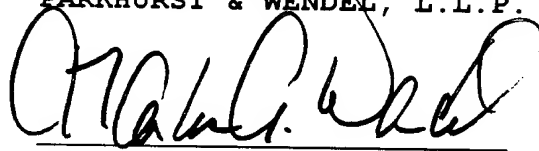
56247 in view of Inoue et al. '236. The primary reference has been relied upon for the same reasons as in the prior rejection. That rejection has been discussed above. The secondary reference in this rejection is said to show using a high silica zeolite with a Si/Al ratio of greater than 20 for exhaust gas conversion. The Examiner again concludes that the claimed subject matter would have been obvious to the person of ordinary skill in the art from a joint consideration of these references. Applicants respectfully traverse this rejection for the same reasons given when traversing the rejection using Eberly, Jr. '488 as the secondary reference. Inoue et al. '236 does not teach or suggest the need to control both the Si/Al ratio and the alkali metal content in the zeolite to give effective results for applicants' intended use. The claims patentably distinguish over this combination of references for the reasons given above, i.e., the specification establishes the necessity to have controls on both the Si/Al ratio and in the alkali metal content in the zeolite. Inoue et al. '236 provides no rationale to do so. The rejection should be withdrawn.

In view of the foregoing revisions and remarks, it is respectfully submitted that claims 3, 5, 6, 12, and 14 are in condition for allowance and a Patent and Trademark Office paper to those ends is earnestly solicited.

The Examiner is requested to telephone applicants' attorney at the number appearing below if further changes are required prior to allowance.

Respectfully submitted,

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